

3 NOV 1978

MEMORANDUM FOR: Deputy Director for Processing  
Chief, Special Projects Staff

25X1 FROM :   
Deputy Director of Data Processing

SUBJECT : Proposal for a Centralized Community  
Bibliographic and Document Retrieval System  
Operated by CIA

REFERENCE : OCR memo, same subject, dated 19 October 1978

1. Attached is a copy of a proposal, submitted by the Director of Central Reference, that CIA offer to the Intelligence Community a centralized bibliographic and document retrieval system based on AEGIS. The proposal would demonstrate to the Information Handling Committee and the Community at large that CIA is not as unwilling as many believe to participate in COINS and other efforts to create a true community data base. Also attached is a statistical trend report showing among other things the number of terminal queries handled by OCR's Central Libraries Division in Fiscal 1978. Accompanying the statistical report is a copy of a note from D/OCR to D/ODP explaining a few of the entries on the report.

2. Before submitting the proposal to the IHC, we need to evaluate carefully what impact this proposal would have on ODP. We also need to satisfy ourselves that OCR's estimates regarding cost and time needed for implementation are reasonable and defensible.

3. I have been asked to put together the IHC presentation. Before I do so I would appreciate receiving your comments on the proposal's impact and on its time and cost estimates. I would also like your views on a question raised by D/ODP about the possibility that a third option may be available to us. This option, falling somewhere between OCR's options 1 and 2, would involve replacing

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written or telephonic requests with electrical (voice or narrative) two way communications between the requestor and the intermediary (the OCR area reference analyst), permitting the results of the query to be transmitted to the requestor electrically.

4. I will be sharing the OCR memorandum with the Office of Communications and eliciting comments from them about the communications implications of such a proposal.

5. It would be helpful to me if I could have your comments by 17 November.

Atts: a/s

Distribution:

- 1 - ea. Addressee
- 2 - O/D/ODP

O/D/ODP/ [ ] :aj/3 November 1978

25X1

14 November 1978

MEMORANDUM FOR: Deputy Director of Data Processing

STATINTL

FROM : [REDACTED]  
Deputy Director for Processing

SUBJECT : Proposal for a Centralized Community  
Bibliographic and Document Retrieval  
System Operated by CIA

REFERENCE : OCR Memo, dtd 19 Oct. 1978, Same Subject

STATINTL 1. The attached memorandum speaks to the OCR proposal outlined in the referenced document on a paragraph by paragraph basis. [REDACTED] comments are valid and they highlight some of the real problems.

2. As a general statement, however, the OCR proposal does not fully address the problems that would be faced by ODP in providing such a service.

3. Any expansion in RECON services would require a major redesign of the data base, since it is too large for the present RECON system. This will be expensive. Option 1 assumes no software cost and very low hardware costs. A better guess at this point would be about \$250,000 to remove all I/O bottlenecks from the existing system so as to make better utilization of the existing 370/168 CPU, and an annual maintenance cost of \$100,000.

4. Option 2 will require dedicated support from Engineering Division, Systems Programming Division and Operations Division. This is a CAMS-like approach and would be expensive. Ten positions (two systems programmers and eight operators) would be needed to support this operation in a stand-alone environment that is electrically isolated from our present facilities. Approximately 2,500 square feet of computer-grade floor space would also be required.

5. Without any estimate of the transaction loading and the number of terminals to be supported, we must be cautious in selecting the appropriate CPU. It may well be that a 158 size machine is not adequate for a dedicated environment. In the case of CAMS, a 360/65 was determined to be drastic overkill initially. Once users got some experience, CAMS requirements exploded. The cost for a dedicated CPU in option two is probably closer to 4 million dollars than the estimate of 2.7 million.

STATINTL



Att: a/s

STATINTL cc:  w/att.

8 November 1978

MEMORANDUM FOR: Deputy Director for Processing, ODP

THROUGH : Chief, Engineering Division, E/ODP *DLM*

STATINTL

FROM :   
Chief, SEB/ED/F/ODP

SUBJECT : OCR Proposal for a Community-wide  
RECON/AEGIS System

1. This memorandum documents my thoughts on the implications, for ODP, of the OCR proposal to offer a RECON/AEGIS type service to all of the intelligence community. I found the proposal itself to be quite readable and well organized. The level of detail is sufficient to make the case for a feasibility study without inundating the reader with more complexity than is necessary. In general the ideas and concerns that occurred to me in reviewing this paper are as follows:

- o I think that some of the communications problems that may arise are not emphasized sufficiently. (See paragraphs 6 and 7 of this memo.)
- o The 158-Blue CPU might be a candidate for this application if bibliographic option 2 is adopted. (See paragraph 6 of this memo.)
- o From the Processing standpoint, the implications of bibliographic option 2 are considerable. Floor space, peripheral equipment funding and operational staffing will all present problems even if a CPU is available.

2. Succeeding sections of this memorandum provide more detail on specific parts of the proposal. Section headings correspond to those in the OCR proposal itself. My thoughts on Mr. May's suggestion for a third option appear in paragraph 8.

Why Use RECON?

3. Paragraphs 4, 5 and 6 of the OCR proposal make a good case for the adoption of RECON for this application. My concern is that we do not underestimate the cost of re-design to make this program capable of responding to large on-line system requirements. In addition to making the code re-entrant so that it can handle larger terminal loads, care will have to be taken if data base bottlenecks are to be avoided.

4. A possibility we might consider, if a considerable re-write is involved, is to recode RECON to run under CICS. The advantages of this approach include:

- o The problem of terminal communication interface will be solved with a generalized system with which ODP already has some expertise.
- o Tuning, performance evaluation and debugging tools will not have to be developed since they already exist for CICS.
- o Program development should be facilitated since CICS will provide many system services and will enforce a relatively standardized coding format on the developer.
- o Finally, this will be a step in what should be an ODP standardization goal for all on-line systems. Ideally ODP would support only three on-line systems, VM to meet all time-sharing requirements, GIMS for large scale data base management applications and a CICS environment to support those customers who need special purpose code to access their data bases. ODP could support the CICS environment and the customer would be responsible for the application dependent code run under it.

The Bibliographic System (Option 1)

5. Although no additional hardware requirement is anticipated for this alternative beyond the one extra disk drive for data base storage, we can expect some performance problems if the RECON workload is significantly increased. Current OCR utilization of the 370/168-1 is about 30% during peak periods. Utilization much beyond this level cannot be realized without removing current I/O bottlenecks. Removing these bottlenecks may require additional channel and disk controller capacity as well as more disk space for this service.

The Bibliographic System (Option 2)

6. This option, involving non-agency, on-line access to ODP computer facilities, would present the same problems as our present CAMS service. The most significant problems from Processing's point of view are:

- o Where do we house an electrically isolated CPU and how do we back it up?
- o What kind of communication facility do we use? A conversation with [ ] leads me to believe that the COINS network may not be the best option. COINS is also considering an ARPA-like follow-on network which would also impact our plans.
- o Assuming that we could use the 158-Blue for this application, after the CAMS backup CPU replaces it in FY-81, are we inviting another CAMS-like problem of escalating demand?

STATINTL

7. My first-cut estimate of the best way for us to implement an option 2 type service would be to put the CPU in the Ruffing Center with an isolated COMTEN front-end. Backup would be limited to Agency users by moving the application to another Ruffing Center CPU and switching CIA user terminals to the internal Agency front-end network.

The Bibliographic System (Option 3)

8. From Processing's point of view, Mr. May's suggested alternative has the advantage of simplifying our communication and security problems since all on-line access will be within the Agency. It also provides end-user access to expert assistance and represents a considerable saving vis-a-vis option 2.

9. The primary disadvantage that I can see is the potential for a number of human engineering problems. Many people do not work well in a telephone interface environment and this system would undoubtedly require lengthy conversational or teletype sessions. The problems of transmitting relatively large amounts of data or operating in a slow response mode could make this approach unfeasible.

## The Document Retrieval System

10. I'm not familiar enough with the ADSTAR project to make any significant comment on this part of the proposal. The arguments associated with the off-line and on-line options seem reasonable to me. The difficulties associated with the on-line communication volume should, I would think, make this option prohibitively expensive.

## FUNDING

11. In regard to funding the two basic bibliographic retrieval options, my feelings are as follows:

- o The off-line alternatives (option 1 or Mr. May's option 3), using the current OCR service machine, would require more than a one disk drive equipment enhancement at \$24,000 per year. Any significant increase in the workload imposed on the RECON program may well require re-coding of the software and additional I/O resources to guarantee an acceptable level of system response. \$100,000 per year might be a better estimate of the true cost involved.
- o The price for option 2, the on-line alternative, is quoted as 2.7 million dollars for a dedicated CPU. It would seem more reasonable for ODP to use the 158-Blue for this service. Since this machine is already purchased, a considerable saving could be realized. Because the RECON machine would have to be isolated for security reasons, dedicated peripheral and front-end communication equipment would have to be acquired. This equipment would cost approximately 1.5 million dollars to buy. If a new CPU were to be acquired for this service the estimate of 2.7 million dollars for the entire configuration is probably low by about one million dollars.

## Implementation Time

12. The lead time of one year for an off-line retrieval capability (6 months for planning and 6 months for implementation), should be enough time for SPD and ED to insure that a workable system will be available if the manpower can be allocated to this task. Conversion to MVS and testing and tuning under increased loads may be all that is required.



14 November 1978

STATINTL  
MEMORANDUM FOR: Deputy Director of Data Processing  
FROM : [REDACTED]  
Deputy Director for Processing  
SUBJECT : Proposal for a Centralized Community  
Bibliographic and Document Retrieval  
System Operated by CIA  
REFERENCE : OCR Memo, dtd 19 Oct. 1978, Same Subject

STATINTL  
1. The attached memorandum speaks to the OCR proposal outlined in the referenced document on a paragraph by paragraph basis. [REDACTED] comments are valid and they highlight some of the real problems.

2. As a general statement, however, the OCR proposal does not fully address the problems that would be faced by ODP in providing such a service.

3. Any expansion in RECON services would require a major redesign of the data base, since it is too large for the present RECON system. This will be expensive. Option 1 assumes no software cost and very low hardware costs. A better guess at this point would be about \$250,000 to remove all I/O bottlenecks from the existing system so as to make better utilization of the existing 370/168 CPU, and an annual maintenance cost of \$100,000.

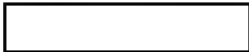
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STATINTL



Att: a/s

STATINTL cc:  w/att.

2D/ODP  
ODP # 8-1919

19 OCT 1978

MEMORANDUM FOR: CIA Member, Intelligence Information  
Handling Committee

FROM : H. C. Eisenbeiss  
Director of Central Reference

SUBJECT : Proposal for a Centralized Community Bibliographic  
and Document Retrieval System Operated by CIA

1. This memorandum discusses the advantages of adapting CIA's RECON<sup>1</sup>/retrieval system for intelligence documents to serve as the basis for a centralized bibliographic and document retrieval system to serve all NFIB<sup>2</sup>/agencies. The memorandum also addresses how such a system could be configured, what services could be provided, how long it would take to implement the system, some tentative estimates as to the possible costs involved and various methods of funding its development and operation. The proposal at this stage is purposefully conceptual and brief, and the cost estimates are extremely conjectural. If you and the other IHC members feel the idea is worth further exploration, additional work by an interagency task force will be required to flesh out exactly how such a system might be brought to reality.

2. The proposed system would be composed of two rather distinct subsystems, namely: a) a bibliographic retrieval subsystem wherein document citations dealing with specific search criteria would be provided to the intelligence analyst, and b) a document retrieval subsystem which would provide the analyst with copies of the relevant document images themselves in either soft copy, paper or microfiche. The system's total cost to the government would be mitigated by the savings it would achieve by making unnecessary certain duplicate and redundant systems in the Intelligence Community.

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<sup>1</sup>/ RECON is the on-line version of what is generally referred to as the AEGIS system. AEGIS operates primarily in the batch mode but RECON uses an inverted file technique enabling faster access to the data.

<sup>2</sup>/ Defined as CIA, State/INR, DIA, the Military Service's Intelligence Branches, NSA, Treasury Department, DOE and FBI.

SUBJECT: Proposal for a Centralized Community Bibliographic and Document Retrieval System Operated by CIA

3. Various possible options and means of configuring this system exist, including arrangements involving centralized file creation of both bibliographic and microfilm records combined with decentralized retrieval service (wherein copies of magnetic tapes and the filmed documents would be transmitted on a regular basis to individual agencies for their own use). A number of these options are explored in this paper but not the "centralized/decentralized" approach. Such an arrangement, though technically feasible, is believed to present too many disadvantages in its implementation and operation to warrant further examination.

Why Use RECON?

4. The RECON subject file, from which the proposed Community data base would be derived, has several advantages over other computer-based document indexing systems currently used by NFIB agencies. Initiated in 1968, the RECON file is the largest and most comprehensive subject index to intelligence reports in the Community. As of September 1978 the file contained 3,000,000 index records. RECON offers access to virtually all substantive intelligence documents originated (given general distribution) by the CIA, DoD, DIA, Air Force, Army, Navy, NSA, State, and NPIC, and some documents from other government agencies of the United States [ ]

STATINTL [ ] The data base contains both raw and finished intelligence reports, includes both collateral intelligence and Sensitive Compartmented Information (SCI), and the area coverage is world-wide. Subjects indexed include government, politics, society, culture, science and technology, transportation, communications, business, commerce, industry, finance, commodities (both strategic and non-strategic), products (civilian and military), resources (including labor and military manpower), and the armed forces. In brief, no area of interest to intelligence is overlooked. Open literature, non-CIA cables, and [ ] reporting are included on a selective basis. STATINTL

5. The full RECON data base is stored in machine-readable form and is searchable by computer via any one or a combination of the elements used to describe each document. These include the bibliographic description (title, issuing agency, post or origin, date, report number, security classification and dissemination restrictions); area codes (China and the Soviet Union are subdivided to the province and oblast level, respectively); specific place names where appropriate; subject codes; and keywords. The 320 subject codes are standardized broad subdivisions, more than one of which can be assigned to any single document by the indexers in CIA's Office of Central Reference (OCR). The keywords are non-standardized terms added by the indexer based on STATSPEC

SUBJECT: Proposal for a Centralized Community Bibliographic  
and Document Retrieval System Operated by CIA

review of the title and document text; these individual keywords supplement the broader subject codes and thus refine the retrievability of each individual document. The flexibility of such an indexing system allows it to easily accommodate new subject indexing requirements.

6. RECON has an historical depth of 10 years and is the most up-to-date general purpose subject index to intelligence documents available. Approximately 85-90 percent of incoming documents are available for computer search of the index records within eight days after receipt, and by July 1979 this figure will be reduced to three days. Portions of the RECON data base are now available to the Community via COINS, and the total data base itself has been queried on a limited basis by OCR analysts for all NFIB agencies continually since its development. When CIA's earlier bibliographic retrieval system, known as "Intellofax," was in operation, then non-CIA use of the CIA index to intelligence reports was about 45 percent of total queries. With the initiation of the AEGIS/RECON system in 1967-68, however, CIA management placed severe limits on other agency access to these bibliographic records because of substantial reductions imposed on CIA resources. Even under this restriction, however, non-CIA use of the data base has crept upward, and during the first half of CY 1978 the entire data base was queried over 800 times by non-CIA NFIB agencies (approximately 26% of total queries during this period). During the same period, the finished intelligence portion of the RECON data base, which is part of the COINS system, was queried via COINS by non-CIA NFIB agencies over 1,200 times.

#### The Bibliographic Subsystem--Alternative Configurations And Cost Estimates

##### Option One: Retrieval Through Intermediaries

7. The least costly approach of providing RECON bibliographic records to the Community would simply entail offering increased service from the system in its present configuration to other NFIB members. Under this arrangement, a non-CIA analyst presents his research request in writing or over the phone to an OCR area reference analyst, who queries the RECON data base and then mails the printed listing of records to the original requester.

8. The primary disadvantages of this system are the delays involved in having to mail the request and the document listing. The existence of an intermediary (the OCR area reference analyst) between the end user of the data and the data base itself can also be a disadvantage, but not without some positive aspects. Among the disadvantages, the requester may have no way of knowing how large or small a document

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listing he will be getting until he receives it from the area reference analyst. Any revision of his query to make his request either more inclusive, more selective, or otherwise more appropriate for retrieving precisely what he needs can only be made after the query has been run and the complete document listing is received through the mail. On the positive side, the intermediary reference analyst usually has a better knowledge than the requester of the subject indexing codes and keywords (including how they have been used), and he can often translate the requester's needs into a more effectively worded query than if the requester is left to his own devices.

9. The following costs are foreseen if the current system of Community access to RECON is simply expanded. About 8-10 more document indexers and dissemination personnel would be needed to process the additional material expected to be added to the data base, in addition to indexing certain categories of documents in greater depth to satisfy the anticipated specific needs of various agencies. An additional typist would be necessary for the added input to the data base. Two additional camera operators would be needed in OCR's Microform Processing Branch to handle the increased volume of incoming documents to be filmed. Fifteen more area reference analysts would be needed to handle the added volume of requests<sup>1/</sup>. At least two more clerks would be needed to address and package listings for mailing and to prepare document and courier receipts. An additional direct access storage unit would have to be leased in order to store the greater number of document citations in the data base. No additional computer equipment, software, personnel or floor space would be required. These operating expenses would probably total more than \$500,000 per year. (See the attached table for a summary of all cost estimates.)

Option Two: Direct On-Line Retrieval

10. If CIA's RECON data base is to be made available to all other NFIB agencies, there is a preferred alternative to merely expanding the operation described above. This would be to provide on-line access to the data base (stored at CIA Headquarters) via remote visual display terminals (VDTs) in other agencies. Such access could be made available

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<sup>1/</sup> It is extremely difficult to accurately estimate the number of index search requests that would be levied on CIA if RECON were made available to the Community without restriction. However, for the purposes of this memo, it is assumed that the current level of requests would increase five-fold. (This figure is largely a guess, based partly on OCR's experience with non-CIA requesters before controls were imposed on their use of the RECON data base.)

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on a 24-hour/day basis if necessary. Bibliographic references displayed on these remote VDTs could be printed immediately on medium-speed (300 lines/minute) printers co-located at each VDT. In this connection it should be pointed out that since the fall of 1973 a variety of intelligence analysts in CIA have been successfully querying the entire RECON data base directly via the SAFE Interim System<sup>1/</sup> remote VDTs without OCR intervention. These analysts were formally trained to search the data base and are provided with guidance when necessary.

11. The principal advantages of this arrangement include the significantly faster availability of the document citations to the analyst, plus the capability for the analyst to work directly with the data base. The latter feature would enable the analyst to determine if the subject codes and keywords he had chosen were producing references to the kinds of documents he needed; he could also see how large his document listing would be and modify his query parameters if necessary. All this could be done before ordering a printout from the system. For standing requests for index searches the capability to query the data base via the batch mode would be retained, rather than requiring the analyst to repeatedly compose his query at a terminal.

12. If the on-line arrangement outlined is adopted, existing data communications systems such as the COINS network should be able to handle the transmission of the RECON bibliographic records from CIA Headquarters to requester terminals located at other NFIB agencies. Assuming that the COINS network were used, the following tasks would have to be undertaken. A dedicated host computer would have to be installed and the RECON system software would have to be modified to make the computer program "reentrant," an arrangement enabling the central processing unit to handle up to 50 on-line requesters simultaneously. This would entail a one-time payment to a contractor, and would require approximately three man-years of his work and one calendar-year of time. An extra programmer and technician would each be needed in OCR's computer support unit to work with the contractor during the software modification and later to maintain this software and troubleshoot the system's operation.

13. In addition to making the host computer operational for RECON, a number of other tasks would be required. The software interfaces connecting the computer, the message processor, and the COINS network would have to be developed. Certain additional software and hardware changes would be needed to adapt the RECON system to accommodate

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<sup>1/</sup> This is the precursor of the ultimate SAFE system, designed to assist in all aspects of intelligence production.

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an increased number of users. Also, some combination of software modifications and human intervention may be required to resolve security release problems. If all the necessary equipment were bought outright, the investment expenses are estimated to be about \$2,700,000.

14. If the necessary equipment were rented instead of purchased outright, its cost is estimated at about \$780,000 per year, including maintenance.

15. The annual operating costs would include an additional computer programmer, a computer technician, and three more computer operators, plus higher equipment maintenance costs. The total of these operating costs is estimated to be about \$175,000 per year.

16. In addition to the extra personnel--including indexers and microphotographers--already mentioned, a centralized staff of about three or four people (\$60-80,000/year) would probably be necessary to coordinate new indexing requirements from participating agencies; to train personnel to use the system and to provide on-going guidance once the system enters operation; and to handle trouble calls and transmit questions to appropriate operating personnel.

The Document Retrieval Subsystem--Alternative Configurations  
And Cost Estimates

17. If a centralized document retrieval service in CIA is envisaged to supplement the centralized bibliographic retrieval service, then the CIA's current document retrieval system would have to be significantly enhanced to accommodate the increased work load. The system as it now operates is capable only of handling the present request load. For this reason future requests for copies of documents, whether generated by either of the bibliographic retrieval options discussed above, would have to await implementation of the CIA's Automated Document Storage and Retrieval (ADSTAR) system, scheduled to enter operation within CIA in November 1979. Like the bibliographic retrieval system discussed above, the ADSTAR document retrieval system could operate in either a batch or on-line mode. In either mode, ADSTAR employs digitized images in its document retrieval and display processing, and present plans call for transmitting such document images directly to CIA user analysts at their remote locations over an upgraded communications network implemented as part of the SAFE system.

Option One: Batch Mode

18. Under this configuration the ADSTAR system within CIA would produce copies of documents after receiving a request for them either



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via a document listing sent through the mail (Bibliographic Retrieval Option 1, discussed in paragraph 7) or via a command entered by the requester on his remote terminal in another NFIB agency (Bibliographic Retrieval Option 2). These documents would then be mailed to the requester.

19. The costs<sup>1/</sup> of such a document retrieval system can be separated into investment and operating expenses. An ADSTAR system augmented to provide Community-wide service would require approximately eight more storage modules to accommodate the assumed 25 percent increase in the number of documents five years old or less that are to be stored in that portion of the system designed to provide immediate retrieval. (These need not be added all at once; two per year could probably take care of the expected annual ADSTAR file growth.) Larger central processing units would be needed to accommodate the greater number of index records and associated support files. For the same reasons more disk packs and disk drives would be needed, the buffer capacity would have to be doubled and at least one other high-speed printer would have to be acquired. If this new centralized document service were to result in a demand for more documents in microfiche, the microfiche output capability would have to be greatly enhanced. Finally, software modifications to the ADSTAR system would be needed. These would all be one-time investment costs, and, while extremely conjectural, would probably total over \$1,000,000.

20. The increased operating costs anticipated for an expanded ADSTAR system would include two additional personnel to intervene in the ADSTAR process to resolve document release questions. Two extra clericals would be needed for packaging, mailing, and preparing document and courier receipts for batch requests for documents. Maintaining the various expanded support files (e.g., MIS and Security Access) would require another full-time employee. For preventive maintenance of the additional equipment, the maintenance contract would cost more. These operating costs would probably come to about \$150,000 per year.

Option Two: Direct On-Line Retrieval

21. In its most sophisticated configuration, remote ADSTAR terminals located throughout the Intelligence Community could allow non-CIA

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<sup>1/</sup> For the purposes of estimating costs, it is assumed that the number of documents processed into the data base will increase by 25% above the present level. This figure is based on the current volume of cables and other material (consisting primarily of finished intelligence produced by various unified and specified military commands) received by CIA that is now being processed on a selective basis only into the RECON data base.

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requesters to query the CIA's central ADSTAR library and display the text and print hard copies of whichever documents the NFIB analyst selected from his RECON listing.

22. Such an on-line document retrieval system, however, could not be developed on the basis of existing data communications systems, such as the COINS network. This is because the bandwidth capacity to handle ADSTAR document image transmissions, which consist of approximately four million bytes per page image, is not available in existing Community networks. The data transmission problem could be eased somewhat by using advanced data compression techniques, but even such a compressed data transmission would require an estimated one million bytes per page image.

23. Development of such an on-line document retrieval system, compared to the ADSTAR batch mode, would require additional outlays for a central processing unit of greater capacity, more software, and (most importantly) the communications system hardware; the latter would include the communication lines themselves as well as the interface equipment, encryptors, decryptors, and remote access and display stations. Also, as with the on-line bibliographic retrieval system, appropriate measures would have to be taken to handle security release problems before this system is implemented. We cannot estimate the total of these additional costs without tasking communications specialists to undertake a study of the problem, but undoubtedly the costs would be substantial.

#### Funding

24. Funding could be accomplished in at least four different ways, each of which has its advantages and disadvantages. One possible method involves user agencies supplying personnel to CIA according to a ratio proportionate to the additional input burdens each agency would impose on the RECON system plus the use each agency made of the system. This method has been used between CIA and NSA for reference support under Project Millstream. Its applicability when a number of agencies are concerned, however, is questionable. There is the problem of allocation of manpower compensation from individual agencies whose costs to the system are fractions of many years. There are also the problems attendant with periodic replacement of personnel and with the loss of control by CIA in applying its own personnel selection procedures and standards to all of the people working in the CIA.

25. A second alternative would be to have user agencies transfer funds to the CIA to pay for their portion of the input and use made of the RECON/ADSTAR system. This would be similar to an arrangement during the 1950's and early 1960's between the State Department and the CIA,

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whereby the latter transferred funds to the State Department to pay for the CIA's use of State Department biographic files. This approach is easier to arrange and manage than the transfer of personnel, but is complicated by the situation in which a number of agencies must defend a portion of their budgets that are allocated to a program run by another agency. Furthermore, this alternative does not address the question of personnel, so a situation could arise in which the CIA had enough money, but had not been authorized enough additional slots for the people needed to operate the system.

26. A third way would be to have those developing and operating costs of the system that are associated with Community service (including the additional positions required) made part of the budget of the Intelligence Information Handling Committee (IHC) and to charge the IHC with defending this portion of its budget each year before Congress. A peculiarity associated with this arrangement would be that the investment and operating funds for an essentially integrated system would have to be split between two budgetary sources, and potential complications could develop if differing budgetary priorities ever arose between the IHC and the CIA.

27. The fourth possible method would be to increase CIA/OCR's budget to allow it to finance the development and operation of the system itself. Such a proposal was made by OCR as an "enhanced" option in its FY 1980 program call, but it was rejected. If adopted, however, it would have the advantage of administrative simplicity and would avoid any complications arising from splitting the source of funds for developing and operating the system among different organizations.

Time Required for Implementation

28. Any planned expansion of the CIA's bibliographic and document retrieval system would require a thorough and detailed study of at least six months' duration, plus time to hire whatever additional personnel the study will have called for.

29. The maximum Community-wide service that could then be implemented would be batch bibliographic retrieval via OCR area reference analysts, with document retrieval accomplished through each NFIB agency's own document library. This arrangement could be set up as soon as additional service personnel were hired, possibly as early as six months after completion of the initial six-month preliminary study, assuming that the requisite floor space could be acquired.

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30. The more advanced approach of providing on-line bibliographic access would probably require at least two years after completion of the initial six-month study. During this period, software modifications would have to be accomplished, additional equipment would have to be acquired and installed, and non-CIA agencies would have to program their budgets for the communications equipment and remote terminals they must fund.

31. Centralized document retrieval would be impossible for the CIA in either a batch or on-line configuration until after the ADSTAR system had been implemented and operationally tested for at least six months. This would make ADSTAR available for Community-wide use no earlier than June 1980, and then only for batch retrieval.

32. An on-line ADSTAR system that serviced non-CIA agencies via remote work stations would take at least two years for programming user-agency budgets, and acquiring and installing the necessary additional equipment.

Unexplored Issues

33. The foregoing examines some basic considerations regarding the establishment of a centralized bibliographic and document retrieval system. If the IHC feels this proposal is worth pursuing, then the questions of user requirements, system architecture, and precise investment and operating costs would all have to be thoroughly researched. In addition, other unresolved issues relating to these and other aspects of the system would have to be studied in detail. These include security arrangements, floor space for machines and people, and the cost and funding of communication lines, printers, remote terminals and other equipment at participating agencies. Finally, we would want to examine what savings such a system would provide within the Community, either by reducing on-going activities or planned new ventures necessitating substantial expenditures in labor and hardware for systems now in the design stage.

   
H. C. Eisenbeiss

STATINTL

Attachment:  
As stated

Option 1 - Retrieval Through Intermediaries

	One-time Costs	Annual Costs
Hardware		\$ 24,000
Staffing		500,000
ADSTAR Costs	\$1,000,000	150,000
		<hr/>
		\$ 674,000
	$\$1,000,000 \div 5 =$	200,000*
		<hr/>
TOTAL		\$ 874,000

\* Pro rata annual share of initial one-time costs, assuming a system life of five years.

Option 2 - Direct On-Line Retrieval

	<u>Purchase</u>		<u>Lease</u>	
	One-time Costs	Annual Costs	One-time Costs	Annual Costs
Hardware	\$2,700,000			\$ 780,000
Maintenance		\$ 70,000		
Software Modification	500,000		\$ 500,000	
Staffing		755,000		755,000
ADSTAR Costs	1,000,000	150,000	1,000,000	150,000
		<u>\$ 975,000</u>		<u>\$1,685,000</u>
	<u>\$4,200,000 ÷ 5 =</u>	<u>840,000*</u>	<u>\$1,500,000 ÷ 5 =</u>	<u>300,000*</u>
TOTAL		<u>\$1,815,000</u>		<u>\$1,985,000</u>

\* Pro rata annual share of initial one-time costs, assuming a system life of five years.